

# Work Order ID 110816

January-07-14 3:08:41 PM

\*110816\*

Page 1

Item ID: D2646 Accept \*N900040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: Aft Cap  
 Start Date: 1/07/14 Start Qty: 50.00 \*50\* Cust Item ID:  
 Required Date: 1/07/14 Req'd Qty: 50.00 \*50\* Customer:  
 Reference:

Approvals: Process Plan: MLJ Date: 14-01-08 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start \*NR1\*  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D2646	Rev C

100 PURCHASING 0.00  
 \*100\*  
 Purchasing Memo 0.00  
 Purchasing Issue P/O: 22601 1-Spin as per Dwg D2646 2-Material release note required CL 14/01/13 50

110 Receive & Inspect for Damage & Mat'l Certs 0.00  
 \*110\*  
 Packaging Memo 0.00  
 Packaging Ensure Material Release Note is attached PC 14/01/13 (50)

120 QC6- Inspect dimensions to drawing 0.00  
 \*120\*  
 QC Memo 0.00  
 Quality Control 14/1/13 50

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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# Work Order ID 110816

January-07-14 3:08:41 PM

**\*110816\***

Page 2

Item ID: D2646 Accept **\*N900040100\*** Setup Start **\*NS1\***  
Revision ID: Stop **\*NS2\***  
Item Name: Aft Cap  
Start Date: 1/07/14 Start Qty: 50.00 **\*50\*** Cust Item ID:  
Required Date: 1/07/14 Req'd Qty: 50.00 **\*50\*** Customer:  
Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130		0.00							
<b>*130*</b>	Small Fab					<u>50x</u>			<u>14/01/30</u>
Small Fab	Memo	0.00							
Small Fab	1-Drill using DT8026 as per Dwg D2646.2-Open holes to .297 as per Dwg D2646.3-Deburr								
140		0.00							
<b>*140*</b>	QC5- Inspect part completeness to step on W/O	0.00				<u>50</u>			
QC	Memo	0.00				<u>can</u>			
Quality Control									
150		0.00							
<b>*150*</b>	Chemical Conversion Coat per QSI005 4.1	0.00				<u>50</u>			<u>14-1-30</u>
HandFinish	Memo	0.00							
Hand Finishing									

DAS  
36  
9-89

DQA:

Date: 14/02/11



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: ~~14-2-10~~

Date: 14-2-10

Work Order update only ☐

Work Order: <u>110816</u>	<b>DISPOSITION</b> Rework <input type="checkbox"/> Scrap <input checked="" type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>			
Part No. <u>D2646</u>		Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>
NCR No. <u>14-3515</u>		Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>
		Thermoforming <input type="checkbox"/>	Finishing <input checked="" type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>
		Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design	14-1-30	150	1	DROPT IT. there a dent in part	DAS 16 9-89	Scrap - destroy NO replace	14-2-4 JLG	DAS 27 3-89	DAS 27 3-89
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator	X			Re operator even	Q52647 14/02/06	Re train employee on importance.	mlw 14.02.10		14/2/10
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

## FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input checked="" type="checkbox"/> Other <u>employee dropped it / bent</u>	<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled
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# Work Order ID 110816

January-07-14 3:08:41 PM

**\*110816\***

Page 3

Item ID: D2646 Accept **\*N900040100\*** Setup Start **\*NS1\***  
Revision ID: Stop **\*NS2\***  
Item Name: Aft Cap  
Start Date: 1/07/14 Start Qty: 50.00 **\*50\*** Cust Item ID:  
Required Date: 1/07/14 Req'd Qty: 50.00 **\*50\*** Customer:  
Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 <b>*160*</b> Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum <i>M 126 829</i> Memo START TIME: <i>10:50</i> <i>3:20</i> FINISH TIME: <i>11:20</i>	0.00 0.00				<i>49</i>	<i>14-2-4</i>	<i>0238</i>	
170 <b>*170*</b> QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00				<i>49x</i>	<i>d</i>	<i>11/02/10</i>	
180 <b>*180*</b> Small Fab Small Fab	Small Fab Memo Install inserts as per Dwg D2646	0.00 0.00				<i>49x</i>	<i>d</i>	<i>11/02/10</i>	

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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# Work Order ID 110816

January-07-14 3:08:41 PM

\*110816\*

Page 4

Item ID: D2646 Accept \*N900040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: Aft Cap  
 Start Date: 1/07/14 Start Qty: 50.00 \*50\* Cust Item ID:  
 Required Date: 1/07/14 Req'd Qty: 50.00 \*50\* Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start \*NR1\*  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	QC5- Inspect part completeness to step on W/O	0.00							
*190*									
QC	Memo	0.00							
Quality Control									
200	Identify as per dwg & Stock Location: <u>FP-061</u>	0.00							
*200*									
Packaging	Memo	0.00							
Packaging									
210	QC21- Final Inspection - Work Order Release	0.00							
*210*									
QC	Memo	0.00							
Quality Control									

49 14-2-5 34 9.89

x49 14-02-05

MLJ 14-02-06

14-02-06

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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# Picklist Print

January-07-14 3:08:41 PM

Page 1

Work Order ID: 110816

Parent Item: D2646

Parent Item Name: Aft Cap

Start Date: 1/07/14

Required Date: 1/07/14

Start Qty: 50.00

Required Qty: 50.00

Comments: IPP: G05.08.22Hole size revised in Step 5KJ/JLM  
IPP Rev:H Changed Inserts 07-02-19 JLM  
IPP rev I changed inserts 07.06.11 EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
ALS7-1032-130 Rivnut		Purchased	No			110	Each	1,790.0000	2	100			
<div style="display: flex; justify-content: space-between;"> <span>D3683-1</span> <span>all per CP 140204</span> </div>													
						<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>					
						FG	100						
						121444	100						
						ST279	1690						
						119530	73						
						122763	38						
						124226	50						
						m126109	1529						
D2646P Aft Cap		Purchased	No			180	Each	0.0000	1	50			

M36319 (v98) 11/02/14

110816 10 14/01/29 (50)

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width:100%; border: none;"> <tr> <td style="width:15%;">Skid-tube <input type="checkbox"/></td> <td style="width:15%;">Crosstube <input type="checkbox"/></td> <td style="width:15%;">Water Jet <input type="checkbox"/></td> <td style="width:15%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

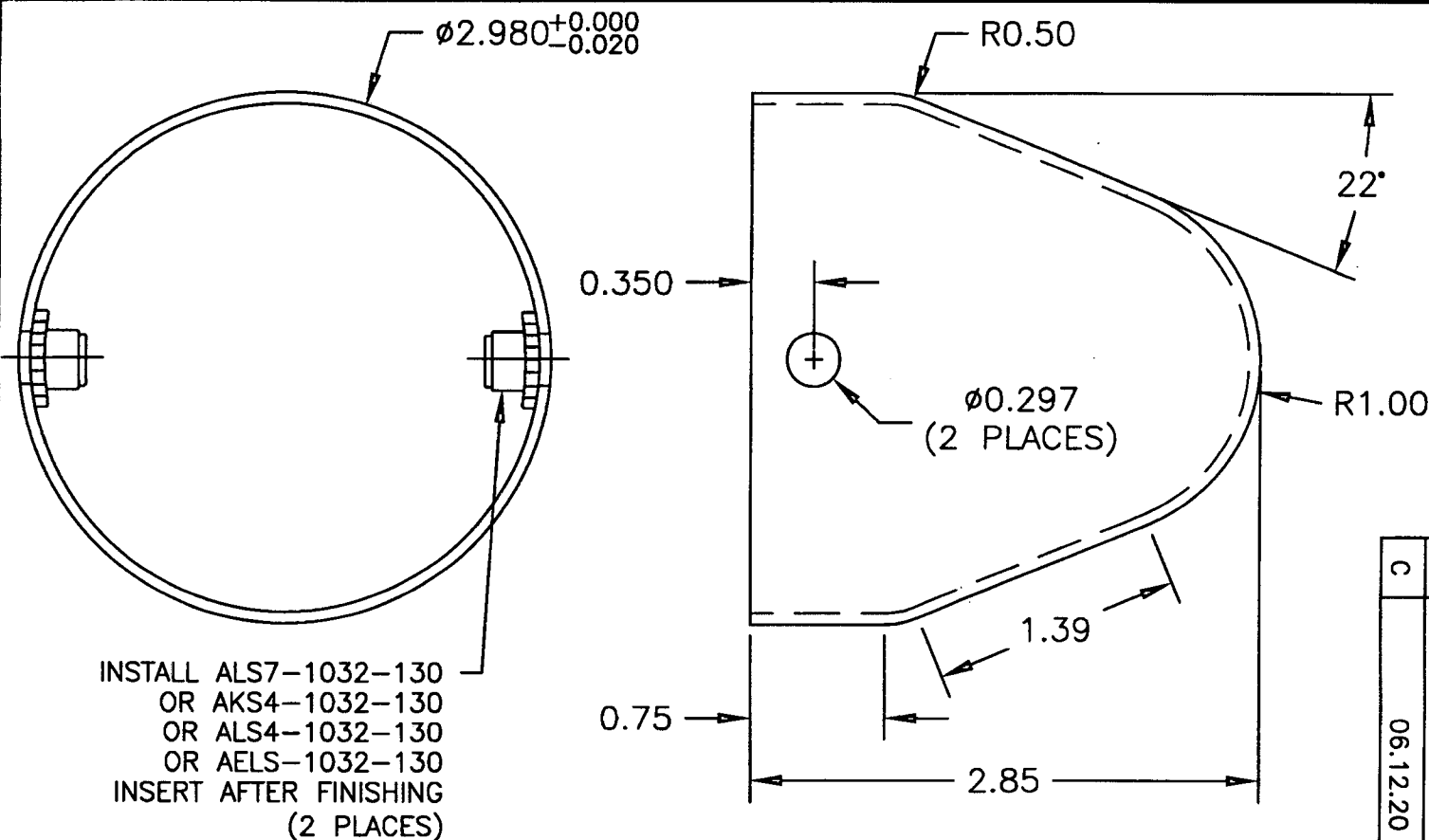
Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

### FAULT CATEGORY

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge  <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled  <input type="checkbox"/> Other _____ _____ _____ _____
--	--	---	---



DESIGN	DS	DRAWN BY	PH	DART AEROSPACE USA, INC.
CHECKED	PH	APPROVED	PH	PORT HADLOCK, WA
DATE	06.12.20	TITLE	D2646	REV. C
		AFT CAP		SHEET 1 OF 1
A	97.03.25	NEW ISSUE		SCALE 1:1
B	05.04.01	CHANGE TO CLOSED INSERTS		
C	06.12.20	CHANGE TO OPEN ENDED INSERTS		



#### D2646 AFT CAP

- 1) MATERIAL: ALUMINUM 1100-0 0.063 THICK (QQ-A-250/1)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
POWDER COAT ASSEMBLY WHITE (4.3.5.1) PER DART QSI 005 4.3
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

RELEASED  
07.02.20

110 816 MJS  
14-01-08



# Sieg's Manufacturing Ltd.

Metal Spinning & Metal Fabricating

6236 205 Street, Langley, BC, Canada V2Y 1N7

Phone:(604)530 7455 Fax:(604)530-7490

Check out our website: [www.siegsmfmg.com](http://www.siegsmfmg.com)

## Packing Slip

Packing Slip No.:

43493

Date:

01/27/2014

Page:

1

<b>Sold to:</b>		<b>Ship to:</b>	
DART AEROSPACE LTD. 1270 ABERDEEN STREET HAWKESBURY, ONTARIO K6A 1K7		DART AEROSPACE LTD. 1270 ABERDEEN STREET HAWKESBURY, ONTARIO K6A 1K7	
<b>Order No.:</b>	22601	<b>Sold By:</b>	LOWEY, ARLA
<b>Shipped By:</b>		<b>Ship Date:</b>	01/27/2014
<b>Tracking No.:</b>			

Item No.	Unit	Description	Quantity
D2646P	Each	Aft Cap	50

Comment:



## Sieg's Manufacturing Ltd.

6236 205 Street Langley, B.C. Canada V2Y 1N7

Ph#: (604)530-7455 fax#: (604)530-7490

arla@siegsmf.com

### INSPECTION REPORT

Date: January 27, 2014

Customer: Dart Areospace Ltd.

Packing Slip: 43493

Part#:	Quantity	Material	Check holes	Insp. By.
D2646P	50	0.064 1100- 0	N/a	AL

Notes:

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---

---

Material Certification Attached: Yes



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID **PO22601**

Purchase Order Date 1/13/2014

PO Print Date 1/13/2014

Page Number 1 of 1

**Order From :**

VC-SIE001

SIEG'S MANUFACTURING LTD.  
6236 - 205 STREET  
LANGLEY, BC V2Y 1N7  
CA

**Ship To :** DART AEROSPACE LTD

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

**FAKED**  
6/14/13

**Contact Name**

**Vendor Phone** 604 530 7455

**Ship To Contact**

**Ship To Phone**

**Ship Via:** FedEx PI collect

**Ship Acct:**

**Buyer**

Chantal Lavoie

**Customer POID**

**Customer Tax #**

10127-2607

**Terms**

Net 30

**Currency**

CAD

**FOB**

Destination-Collect

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	D2646P  AS PER DWG D2646 REV. C B110816	Aft Cap	1/22/2014 Yes 1/22/2014		50.00 Each	\$6.70	\$335.00

**Line Total:** \$335.00

**PO Total:** \$335.00

*CL ms*

**Note:** Pricing listed above is as per contract agreement between Dart Aerospace and the respective manufacturer.  
No substitution or deviation without consent.  
Certificate of Conformity or Material Certification required - YES NO  
PST# 6122-5207

**Change Nbr:**

1

**Change Date:** 1/13/2014

ThyssenKrupp Materials NA  
Copper and Brass Sales Division  
95A Avenue 19044  
V4N 4P2 Surrey  
Tel.: 6048823493 Fax: 6048820686



Order number	Ord-pos	Del-pos	Part description
Customer PO	PO date	Quantity	Customer Part
MTR header	MTR type	Search criteria	Heat lot
=====			
C8A/1401020197	000010	900001	1100 Aluminum - O Aluminum Sheet 0.06300
1271	08.12.2011	80.000 ST	
Att_001.PDF	NCAP	930124417720110001	28149601A
C8A/1401020197	000010	900002	1100 Aluminum - O Aluminum Sheet 0.06300
1271	08.12.2011	8.000 ST	
Att_002.PDF	NCAP	930124192420110001	112843
C8A/1401020197	000010	900003	1100 Aluminum - O Aluminum Sheet 0.06300
1271	08.12.2011	12.000 ST	
Att_003.PDF	NCAP	930124417720110004	28149601A

Delivery number
2401597801
Date
12.12.2011

*D Jewell*

SIEGS MANUFACTURING LTD.  
6236 205 ST  
LANGLEY V2Y 1N7  
CANADA

L-A-B  
ACCREDITED  
#L2068-1

ALERIS ROLLED PRODUCTS LLC  
C/O ALERIS ROLLED PRODUCTS, INC.  
P O BOX 480  
LEWISPORT, KENTUCKY 42351

# ALUMINUM CERTIFICATION SHEET

THIS IS TO ADVISE THAT THE MATERIAL PRODUCED FOR YOUR ORDER  
CONFORMS TO THE SPECIFICATIONS OUTLINED BY THE ALUMINUM ASSOCIATION.  
MATERIAL WAS MELTED, ROLLED, AND PROCESSED IN THE USA.  
THE TEST RESULTS RELATE ONLY TO THE SKID IDENTIFIED BELOW:

SKID : 427978 CUSTOMER: THYSSENKRUPP MATERIALS, NA  
ORDER: 00337316-000001 17901 ENGLEWOOD DRIVE  
LOT : 281496 CLEVELAND OH44130  
SUBLOT : 28149601A PO # : 124138  
PART # :  
DESCRIPTION: ALLOY 1100  
TEMPER O  
SIZE .0630 X 48.0000

SPECS: ASTM B209

DATE TESTED: 09/13/2011 CHEMICAL COMPOSITION - ASTM E1251

SI	FE	CU	MN	MG	CR	ZN	TI	GA	7	AL
.11	.60	.13	.00	.00	.00	.01	.00	.00	.00	99.16

DATE TESTED: 10/02/2011 MECHANICAL PROPERTIES - ASTM B557

	RESULTS	T42 RESULTS	T62 RESULTS
ULTIMATE TENSILE STRENGTH MIN (KSI)	13.5		
ULTIMATE TENSILE STRENGTH MAX	13.6		
ULTIMATE TENSILE STRENGTH AVG	13.6		
YIELD STRENGTH MIN (KSI)	5.9		
YIELD STRENGTH MAX	6.4		
YIELD STRENGTH AVG	6.2		
ELONGATION MIN %	30		
ELONGATION MAX %	30		
ELONGATION AVG %	30		

NET SKID WEIGHT: 8,422

CHEMICALS CERTIFIED: /S/ SUSAN MUDD, QUALITY SYSTEMS SUPERINTENDENT  
MECHANICALS CERTIFIED: /S/ SUSAN MUDD, QUALITY SYSTEMS SUPERINTENDENT





Skana Aluminum Co  
Rolling Mill - Certified Metal

**Certification of Properties and Analysis**

Physical test: 112843 Aluminum Alloy: 1100 Temper: -O- Thickness: .0630

Tested For: Copper and Brass Sales

6156 PO No: 5400107660-R01

Chemical	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Others	Al
Min Range	..		0.05	..	..	..	..	..	..		
Max Range	.95 Si	+ Fe	0.20	0.05	..	..	..	0.1	..	0.05	

Coil Ref. No.	1	2	3								
Tensile Strength KSI	13.03	13.12	12.81								
Yield Strength KSI	5.37	5.28	5.17								
% Elong. in 2 in.	31.70	31.70	31.60								

Coil Ref. No.											
Tensile Strength KSI											
Yield Strength KSI											
% Elong. in 2 in.											

Coil Ref. No.											
Tensile Strength KSI											
Yield Strength KSI											
% Elong. in 2 in.											

Coil Ref. No.											
Tensile Strength KSI											
Yield Strength KSI											
% Elong. in 2 in.											

Coil Ref. No.											
Tensile Strength KSI											
Yield Strength KSI											
% Elong. in 2 in.											

Remarks

Tested By: NH

Certified Date: 22 Sep 2011

NH .063 X 48,000 MF 3/3

ITEM# ALFLR01226

MEETS/EXCEEDS ASTM B209-10 SPECS



#### CERTIFIED CHEMICAL & MECHANICAL ANALYSIS

Sold To: Copper & Brass Sales  
P.O. Box 5116

Ship To: Copper & Brass Sales  
404 Centura Court

Southfield MI 48086-5116

Spartanburg SC 29303

Customer PO Number: 5400111624-R01

Part No:

Ken-Mac Order/Item: 462255-1

Item Description : MA .06300 48.000 144.000 1100 0 MFREG MFREG

Heat/Lot: 28149601A Mill Tag No : 427978  
KM Stock No: 167291 Case Tickets: 752416, 752417, 752418

----- Chemical Composition -----  
(Si) (Cu) (Fe) (Zn) (Al)  
.1100 .1300 .6000 .0100 99.15

----- Mechanical Composition -----  
Tensile PSI: 13,500 Yield PSI: 5,900 Elongation: 30.0 Hardness as Shipped:

Heat/Lot: 28149601A Mill Tag No : 427979  
KM Stock No: 167292 Case Tickets: 752418, 752419, 752420

----- Chemical Composition -----  
(Si) (Cu) (Fe) (Zn) (Al)  
.1100 .1300 .6000 .0100 99.15

----- Mechanical Composition -----  
Tensile PSI: 13,500 Yield PSI: 5,900 Elongation: 30.0 Hardness as Shipped:

Total Pounds: 16,498

A Page 1

*BNP*

Bob Harley - Corporate Quality Manager

To the best of our knowledge, the aforementioned material conforms to all applicable standards.

L-A-B  
ACCREDITED  
#L2068-1

ALERIS ROLLED PRODUCTS, LLC  
C/O ALERIS ROLLED PRODUCTS, INC.  
P O BOX 480  
LEWISPORT, KENTUCKY 42351

ALUMINUM CERTIFICATION SHEET

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THE TEST RESULTS RELATE ONLY TO THE SKID IDENTIFIED BELOW:

SKID : 427979 CUSTOMER: THYSSENKRUPP MATERIALS, NA  
ORDER: 00337316-000001 17901 ENGLEWOOD DRIVE  
CLEVELAND OH44130  
LOT : 281496  
SUBLOT : 28149601A PO # : 124138  
PART # :  
DESCRIPTION: ALLOY 1100  
TEMPER O  
SIZE .0630 X 48.0000

SPECS: ASTM B209

DATE TESTED: 09/13/2011

CHEMICAL COMPOSITION - ASTM E1251

SI	FE	CU	MN	MG	CR	ZN	TI	GA	V	AL
.11	.60	.13	.00	.00	.00	.01	.00	.00	.00	99.13

DATE TESTED: 10/02/2011

MECHANICAL PROPERTIES - ASTM B557

	RESULTS	T42 RESULTS	T62 RESULTS
ULTIMATE TENSILE STRENGTH MIN (KSI)	13.5		
ULTIMATE TENSILE STRENGTH MAX	13.6		
ULTIMATE TENSILE STRENGTH AVG	13.6		
YIELD STRENGTH MIN (KSI)	5.9		
YIELD STRENGTH MAX	6.4		
YIELD STRENGTH AVG	6.2		
ELONGATION MIN %	30		
ELONGATION MAX %	30		
ELONGATION AVG %	30		

NET SKID WEIGHT: 8,441

CHEMICALS CERTIFIED: /S/ SUSAN MUDD, QUALITY SYSTEMS SUPERINTENDENT  
MECHANICALS CERTIFIED: /S/ SUSAN MUDD, QUALITY SYSTEMS SUPERINTENDENT

L-A-B  
ACCREDITED  
#L2068-1

ALERIS ROLLED PRODUCTS, LLC  
C/O ALERIS ROLLED PRODUCTS, INC.  
P O BOX 480  
LEWISPORT, KENTUCKY 42351

# ALUMINUM CERTIFICATION SHEET

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MATERIAL WAS MELTED, ROLLED, AND PROCESSED IN THE USA.  
THE TEST RESULTS RELATE ONLY TO THE SKID IDENTIFIED BELOW:

SKID : 427978  
ORDER: 00337316-000001  
LOT : 281496  
SUBLOT : 28149601A  
DESCRIPTION: ALLOY 1100  
TEMPER O  
SIZE .0630 X 48.0000  
CUSTOMER: THYSSENKRUPP MATERIALS, NA  
17901 ENGLEWOOD DRIVE  
CLEVELAND OH44130  
PO # : 124138  
PART # :

SPECS: ASTM B209

DATE TESTED: 09/13/2011

## CHEMICAL COMPOSITION - ASTM E1251

SI	FE	CU	MN	MG	CR	ZN	TI	GA	V	AL
.11	.60	.13	.00	.00	.00	.01	.00	.00	.00	99.16

DATE TESTED: 10/02/2011

## MECHANICAL PROPERTIES - ASTM B557

	RESULTS	T42 RESULTS	T62 RESULTS
ULTIMATE TENSILE STRENGTH MIN (KSI)	13.5		
ULTIMATE TENSILE STRENGTH MAX	13.6		
ULTIMATE TENSILE STRENGTH AVG	13.6		
YIELD STRENGTH MIN (KSI)	5.9		
YIELD STRENGTH MAX	6.4		
YIELD STRENGTH AVG	6.2		
ELONGATION MIN %	30		
ELONGATION MAX %	30		
ELONGATION AVG %	30		

NET SKID WEIGHT: 8,422

CHEMICALS CERTIFIED: /S/ SUSAN MUDD, QUALITY SYSTEMS SUPERINTENDENT  
MECHANICALS CERTIFIED: /S/ SUSAN MUDD, QUALITY SYSTEMS SUPERINTENDENT

L-A-B  
ACCREDITED  
#L2068-1

ALERIS ROLLED PRODUCTS, LLC  
C/O ALERIS ROLLED PRODUCTS, INC.  
P O BOX 480  
LEWISPORT, KENTUCKY 42351

# ALUMINUM CERTIFICATION SHEET

THIS IS TO ADVISE THAT THE MATERIAL PRODUCED FOR YOUR ORDER  
CONFORMS TO THE SPECIFICATIONS OUTLINED BY THE ALUMINUM ASSOCIATION.  
MATERIAL WAS MELTED, ROLLED, AND PROCESSED IN THE USA.  
THE TEST RESULTS RELATE ONLY TO THE SKID IDENTIFIED BELOW:

SKID : 427979  
ORDER: 00337316-000001  
LOT : 281496  
SUBLOT : 28149601A  
DESCRIPTION: ALLOY 1100  
TEMPER O  
SIZE .0630 X 48.0000  
CUSTOMER: THYSSENKRUPP MATERIALS, NA  
17901 ENGLEWOOD DRIVE  
CLEVELAND OH44130  
PO # : 124138  
PART # :

SPECS: ASTMB209

DATE TESTED: 09/13/2011

## CHEMICAL COMPOSITION - ASTM E1251

SI	FE	CU	MN	MG	CR	ZN	TI	GA	V	AL
.11	.60	.13	.00	.00	.00	.01	.00	.00	.00	99.15

DATE TESTED: 10/02/2011

## MECHANICAL PROPERTIES - ASTM B557

	RESULTS	T42 RESULTS	T62 RESULTS
ULTIMATE TENSILE STRENGTH MIN (KSI)	13.5		
ULTIMATE TENSILE STRENGTH MAX	13.6		
ULTIMATE TENSILE STRENGTH AVG	13.6		
YIELD STRENGTH MIN (KSI)	5.9		
YIELD STRENGTH MAX	6.4		
YIELD STRENGTH AVG	6.2		
ELONGATION MIN %	30		
ELONGATION MAX %	30		
ELONGATION AVG %	30		

NET SKID WEIGHT: 8,441

CHEMICALS CERTIFIED: /S/ SUSAN MUDD, QUALITY SYSTEMS SUPERINTENDENT  
MECHANICALS CERTIFIED: /S/ SUSAN MUDD, QUALITY SYSTEMS SUPERINTENDENT

# Skana Aluminum Company

## Rolling Mill - Certified Metal

### Certification of Properties and Analysis

Physical test: 112843 Aluminum Alloy: 1100 Temper: -O- Thickness: .0630  
 Tested For: Copper and Brass Sales 6156 PO No: 5400107660-

Chemical	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Others	Al
Min Range	..		0.05	..	..	..	..	..	..		
Max Range	.95 Si	+ Fe	0.20	0.05	..	..	..	0.1	..	0.05	

1	13.03	5.37	31.70	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Others
				.193	.484	.087	..	..	..	..	..	..	..

Al

BAL

2	13.2	5.28	31.70	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Others
				.188	.049	.039	..	..	..	..	..	..	..

Al

BAL

3	12.81	5.17	31.60	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Others
				.182	.439	.082	..	..	..	..	..	..	..

Al

BAL

Remarks

Tested By: NH

Certified Date: 22 Sep 2011

NH .063 X 48.000 MF 3/3

ITEM# ALFLR01226

MEETS/EXCEEDS ASTM B209-10 SPECS

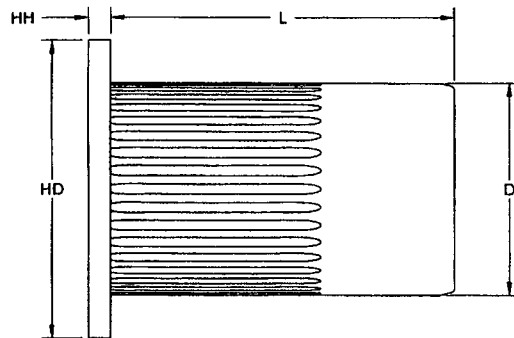
Thursday, September 22, 2011

MADE IN THE U.S.A.

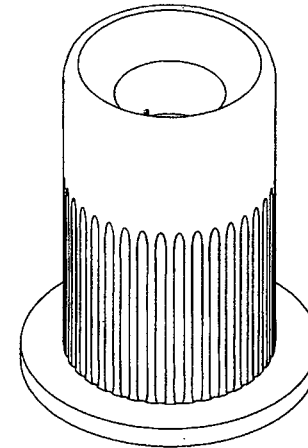
QF 824-1-2

Page 1 of 2

# SPECIFICATION CONTROL DRAWING



**D3683-X INSERT**



DART P/N	THREAD SIZE	"D" MAX	"HD" ±0.015	"HH"	"L" ±0.015	POSSIBLE SUPPLIERS
D3683-1	#10-32	Ø0.296	Ø0.415	0.030	0.475	AVIBANK MFG INC P/N: ALS7-1032-130 ALS4-1032-130 AKS7-1032-130 AKS4-1032-130 ATLAS ENGINEERING: AELS-1032-130 SPAENAU INC: 215-074
D3683-3	1/4-28	Ø0.390	Ø0.500	0.030	0.580	AVIBANK MFG INC P/N: ALS7-428-165 ALS4-428-165 AKS7-428-165 AKS4-428-165 ATLAS ENGINEERING: AELS-428-165 SPAENAU INC: 215-076

**NOTES:**

- 1) MATERIAL: C-1010 OR C-1008 STEEL
- 2) FINISH: CAD PLATED PER QQ-P-416 TYPE II (GOLD) CLASS 2 WITH CLEAR PROTECTIVE COATING OR ZINC YELLOW PLATED PER ASTM-B633, FE/ZN 8, TYPE II WITH CLEAR PROTECTIVE COATING (OPTIONAL)
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: N/A
- 8) THREADS: UNIFIED, CLASS 2B PER ASME B1.1
- 9) A CERTIFICATE OF CONFORMITY IS REQUIRED FROM THE MANUFACTURER TO VERIFY MATERIAL, FINISH, AND THREADS ARE PER THIS DWG

**RELEASED**  
09.07.11/21

B	ADDED P/N D3683-3	RF	09.03.30
A	NEW ISSUE	DC	07.11.21
REV.	DESCRIPTION		BY DATE
DESIGN	JZ	<b>DART AEROSPACE USA, INC.</b>	
DRAWN	RF	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		D3683	SHEET 1 OF 1
APPROVED		TITLE	SCALE
DE APPR.		INSERT	NTS
DATE	09.03.30	<small>COPYRIGHT © 2007 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	